

AMENDMENTS TO THE CLAIMS

1-10. (Cancelled)

11. (Currently Amended) A method of manipulating computer aided design (CAD) objects, comprising:

receiving ~~user~~ input from a user to associate connect two CAD objects by a CAD application, wherein ~~said user input identifies a coupling between said two CAD objects selected from the list consisting of:~~ said CAD application supports a vertex-to-vertex connection, an axis-to-axis connection, an edge-to-axis connection, and a face-to-face connection for selection by the user;

displaying said two CAD objects according to ~~the coupling~~ a connection identified by the ~~user~~ input;

calculating a reduction in degrees of freedom between said two CAD objects caused by said identified ~~coupling~~ connection; and

displaying an indication of said reduction in said degrees of freedom in association with the display of said two CAD objects.

12. (Previously Presented) The method of claim 11 wherein at least one of said two CAD objects comprises a group of subcomponents.

13. (Currently Amended) The method of claim 11 further comprising:

verifying that said identified ~~coupling~~ connection is consistent with a prior ~~coupling connection~~ between said two CAD objects before performing said displaying said two CAD objects.

14. (Currently Amended) The method of claim 11 further comprising:

receiving user input to position said two CAD objects relative to each other before receiving said user input that identifies a ~~coupling~~ connection between said two CAD objects; and

displaying said two CAD objects according to said relative positioning.

15. (Previously Presented) The method of claim 14 further comprising:
calculating a reduction in degrees of freedom caused by said relative positioning of said two CAD objects; and
displaying said reduction in degrees of freedom in association with display of said two CAD objects.

16. (Currently Amended) The method of claim 11 wherein said CAD application supports collaborative design between ~~said receiving, displaying said two CAD objects, calculating, and displaying an indication are performed by a collaborative design application associated with~~ a plurality of users.

17. (Currently Amended) The method of claim 16 wherein said CAD application ~~collaborative design application~~ maintains a virtual model including said two CAD objects, and wherein said displaying said two CAD objects and displaying said indication are performed by communicating only changes in said virtual model caused by said identified coupling connection.

18. (Currently Amended) The method of claim 16 further comprising:
locking one of said two CAD objects in response to user input from a respective user, prior to receiving user input to ~~associate~~ connect two CAD objects, to prevent other users from manipulating said locked CAD object.

19. (Currently Amended) The method of claim 16 further comprising:
unlocking said one of said two CAD objects after displaying said two CAD objects according to the identified ~~coupling~~ connection.

20. (Previously Presented) The method of claim 11 wherein said displaying said two CAD objects comprises:
applying a transformation matrix to at least one of said two CAD objects.

21. (Currently Amended) A computer aided design (CAD) system, comprising:
means for defining a virtual environment in which CAD objects are manipulated;
means for receiving input from a user to ~~asseeiate~~ connect two CAD objects within
said virtual environment, wherein said ~~input identifies a coupling between said two CAD~~
~~objects selected from the list consisting of:~~ said CAD system supports a vertex-to-vertex
connection, an axis-to-axis connection, an edge-to-axis connection, and a face-to-face
connection for selection by said user;

means for displaying said two CAD objects according to ~~the~~ a connection identified
~~coupling by said received input~~;

means for determining a reduction in degrees of freedom caused by said identified
~~coupling~~ connection; and

means for displaying an indication of degrees of freedom associated with said two
CAD objects after application of said identified ~~coupling~~ connection.

22. (Currently Amended) The CAD system of claim 21 wherein at least one of
said two CAD objects comprises a plurality of subcomponents mutually associated using
respective ~~coupling~~ connections.

23. (Currently Amended) The CAD system of claim 21 further comprising:
means for determining whether said identified ~~coupling~~ connection is consistent with
a prior ~~coupling~~ connection applied to one of said two CAD objects.

24. (Currently Amended) The CAD system of claim 21 further comprising:
means for receiving input from said user to position said two CAD objects relative to
each other; and
means for displaying said two CAD objects according to said relative positioning.

25. (Previously Presented) The CAD system of claim 21 further comprising:
means for applying transformation matrix operations to CAD objects that correspond
to user manipulations of said CAD objects.

26. (Currently Amended) A method, comprising:
providing a virtual environment in which computer aided design (CAD) objects are manipulated;
receiving input from a user to ~~associate~~ connect two CAD objects within said virtual environment, wherein said input identifies a ~~coupling connection~~ selection from a list of selected from a plurality of predefined connection types;
displaying said two CAD objects according to the identified ~~coupling connection~~;
determining a reduction in degrees of freedom caused by said identified ~~coupling connection~~; and
displaying an indication of degrees of freedom associated with said two CAD objects after application of said identified ~~coupling connection~~.

27. (Currently Amended) The method of claim 26 wherein at least one of said two CAD objects comprises a plurality of subcomponents mutually associated using respective ~~coupling connections~~.

28. (Currently Amended) The method of claim 27 further comprising:
determining whether said ~~coupling connection~~ identified by said user is consistent with prior ~~coupling connections~~ applied to one of said two CAD objects.